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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,332	12/20/2001	Mark Moshayedi	SIMTECH.171A	4488

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EXAMINER	
IQBAL, NADEEM	
ART UNIT	**PAPER NUMBER**
2114	

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/032,332	MOSHAYEDI ET AL.	
	Examiner	Art Unit	
	Nadeem Iqbal	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Feb 20, 2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7, 9, 17, 19, & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berenguel et al., (U.S. Patent number 5241508).

4. As per claims 1 & 22, Berenguel et al., teaches (col. 2, lines 1-5) a method and apparatus which connects a volatile memory to a host system via an SCSI interface. He thus teaches the limitations pertain to a data preservation system for flash memory with a host system. He also teaches (col. 2, lines 20-23) that when the main power is interrupted the power detector connects battery power to the RAM bank and DISK. He thus teaches limitations pertain to power supply and energizing a supplemental energy store. He also teaches (col. 2, lines 25-27) that the battery powers the RAM bank and DISK until all of the contents in RAM have been transferred to

DISK. He thus teaches limitations upon loss of the host system power supply, the flash memory system actively isolates the connection to the host system power supply and isolates the interface bus and employs supplemental energy store to complete write operations to flash memory. He does not explicitly disclose a flash memory system as being the nonvolatile memory system. It would have been obvious to a person of ordinary skill in the art to modify the system of Berenguel to replace the DISK with a flash memory system to be utilized as a nonvolatile memory since Berenguel teaches (col. 3, lines 18-20) that a Winchester backup disk is required to provide nonvolatile storage to prevent loss of information in the event of a power failure, and the flash memory in the claim is clearly used as a nonvolatile storage memory as a backup disk.

5. As per claims 2 & 17, Berenguel et al., also teaches (col. 2, lines 20-23) that when the main power is interrupted the power detector connects battery power to the RAM bank and DISK. He thus teaches limitations pertain to power supply and experiencing power failure, a detection circuit in communication with the power supply. He also teaches (col. 2, lines 25-27) that the battery powers the RAM bank and DISK until all of the contents in RAM have been transferred to DISK. He thus teaches limitations pertain to an auxiliary power source, an isolation circuit isolating the auxiliary power source upon a power failure. He also teaches (col. 3, lines 18-20) that a Winchester backup disk is required to provide nonvolatile storage to prevent loss of information in the event of a power failure. He does not explicitly disclose a flash memory system as being the nonvolatile memory system. It would have been obvious to a person of ordinary skill in the art to modify the system of Berenguel to replace the DISK with a flash memory system to be utilized as a nonvolatile memory since Berenguel clearly teaches a

Winchester backup disk required to provide nonvolatile storage to prevent loss of information in the event of a power failure, the DISK is a nonvolatile memory.

6. As per claim 3, Berenguel teaches (col. 2, lines 66-68) RAM the basic storage unit as a volatile memory and is shown as two dynamic random access memories, therefore clearly can act as a buffer.

7. As per claim 4, Berenguel teaches (col. 2, lines 20-23) that when the main power is interrupted the power detector connects battery power to the RAM bank and DISK. He thus teaches a voltage detector.

8. As per claim 5, He does not explicitly disclose that the auxiliary power source comprises capacitors. He teaches (col. 4, lines 9-11) a battery 48 charging from t until an instant t', after which the battery is fully charged. His battery clearly provides the equivalent functionality of that of an auxiliary power source comprising capacitors.

9. As per claims 6, 9 & 19, Berenguel et al., also teaches (col. 2, lines 20-23) that when the main power is interrupted the power detector connects battery power to the RAM bank and DISK. He also teaches (col. 4, lines 9-11) a battery 48 charging from t until an instant t', after which the battery is fully charged. He thus teaches limitations pertain to charging an auxiliary power source experiencing power failure, detecting a loss of the supply voltage. He also teaches (col. 2, lines 25-27) that the battery powers the RAM bank and DISK until all of the contents in RAM have been transferred to DISK. He thus teaches limitations pertain to an auxiliary power source. He also teaches (col. 3, lines 18-20) that a Winchester backup disk is required to provide nonvolatile storage to prevent loss of information in the event of a power failure. He therefore teaches utilizing the auxiliary power source to store data stored in volatile memory into DISK.

He does not explicitly disclose a flash memory system as being the nonvolatile memory system. It would have been obvious to a person of ordinary skill in the art to modify the system of Berenguel to replace the DISK with a flash memory system to be utilized as a nonvolatile memory since Berenguel clearly teaches a Winchester backup disk required to provide nonvolatile storage to prevent loss of information in the event of a power failure, the DISK is a nonvolatile memory.

10. As per claim 7, Berenguel teaches (col. 4, lines 29-31) a switch SC allowing a current to pass through supplying power to the RAMDISK so that data can be stored in DISK. He thus teaches to isolate the auxiliary power source and equivalent operation to that of a relay by switch SC.

11. Claims 8, 10-16, 18, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berenguel et al., (U.S. Patent number 5241508) as applied to claims 1-7 above, and further in view of Li et al., (U.S. Patent number 6336174).

12. Berenguel does not explicitly disclose isolating a host system data bus from the flash memory system. Li et al., teaches (col. 4, lines 18-20) the ability to isolate the HAMM from the host system's power supply during control operations to prevent spurious events from corrupting the data. A person of ordinary skill in the art would have been motivated to include system of Li into the system of Berenguel since such an inclusion provides to prevent spurious events from corrupting the data, thus providing motivation for the stated inclusion.

13. As per claim 10, Li et al., teaches (col. 4, lines 18-20) the ability to isolate the HAMM from the host system's power supply during control operations to prevent spurious events from

corrupting the data. The stated inclusion per claim 8 would include a connection to a power supply.

14. As per claim 11, Berenguel teaches (col. 2, lines 59-61) a first SCSI interface channel connected to a host system 10, SCSI controller in the host system provides commands for the RAMDISK device, thus providing data interface.

15. As per claim 12, Li et al., teaches (col. 6, lines 19-21) that the nonvolatile memory is flash memory.

16. As per claim 13, Berenguel et al., teaches (col. 2, lines 20-23) that when the main power is interrupted the power detector connects battery power to the RAM bank and DISK. He also teaches (col. 4, lines 9-11) a battery 48 charging from t until an instant t', after which the battery is fully charged. He thus teaches limitations pertain to monitoring a power supply. He also teaches (col. 2, lines 25-27) that the battery powers the RAM bank and DISK until all of the contents in RAM have been transferred to DISK. He thus teaches limitations pertain to upon detecting a power failure of the power supply, isolating the non-volatile memory from external connection. He also teaches (col. 3, lines 18-20) that a Winchester backup disk is required to provide nonvolatile storage to prevent loss of information in the event of a power failure. He does not explicitly disclose a flash memory system as being the nonvolatile memory system. It would have been obvious to a person of ordinary skill in the art to modify the system of Berenguel to replace the DISK with a flash memory system to be utilized as a nonvolatile memory since Berenguel clearly teaches a Winchester backup disk required to provide nonvolatile storage to prevent loss of information in the event of a power failure, the DISK is a nonvolatile memory.

17. As per claim 14, Li et al., teaches (col. 4, lines 18-20) the ability to isolate the HAMM from the host system's power supply during control operations to prevent spurious events from corrupting the data. A person of ordinary skill in the art would have been motivated to include system of Li into the system of Berenguel since such an inclusion provides to prevent spurious events from corrupting the data, thus providing motivation for the stated inclusion.

18. As per claims 15 & 20, Berenguel teaches (col. 3, lines 18-20) that when disk 24 is required to provide nonvolatile storage to prevent loss of information in the event of a power failure, the information is transferred via second SCSI channel. He thus provides to isolate the nonvolatile memory from external connections.

19. As per claim 16, He also teaches (col. 3, lines 59-61) a monitoring circuit that switches the power source from the power supply to one of more backup batteries. He thus teaches isolating a power supply connection and a data interface connection.

20. As per claim 18, He does not explicitly disclose that the nonvolatile memory system comprises a flash card. It would have been obvious to a person of ordinary skill in the art to modify the system of Berenguel to replace the DISK with a flash memory card to be utilized as a nonvolatile memory since Berenguel clearly teaches a Winchester backup disk required to provide nonvolatile storage to prevent loss of information in the event of a power failure, the DISK is a nonvolatile memory.

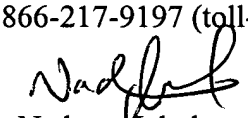
21. As per claim 21, Berenguel teaches (col. 3, lines 62-64) that the batteries enable the contents of the RAM to be transferred to the hard DISK via second SCSI channel. He thus provides to store data from the volatile memory into the non-volatile memory.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadeem Iqbal whose telephone number is (571)-272-3659. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (571)-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nadeem Iqbal
Primary Examiner
Art Unit 2114

NI